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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,307	11/30/2001	Christopher Parks	83504PCW	8354

7590 11/04/2004
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER	
HANNETT, JAMES M	
ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

DT

Office Action Summary	Application No. 10/020,307	Applicant(s) PARKS, CHRISTOPHER	
	Examiner James M Hannett	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

The drawings are objected to because some of the reference characters are illegible and hand drawn. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2612

1: Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,443,885 Van Roermund in view of USPN 5,838,372 Wood.

2: As for Claim 1, Van Roermund teaches on Column 21, Lines 8-53 and depicts in Figure 46 a charge-coupled device having at least two gates (232 and 234) for receiving an electrical signal; at least first and second electrical buses each having a unique voltage ($\Phi 1$ and $\Phi 2$); Van Roermund teaches a second switch (T232) to connect the two gates (232 and 234) together for reducing power consumption by transferring charge from one gate to the other gate at a time when the first switches are in a neutral position See Figure 47. Van Roermund depicts in Figure 47 that when ($\Phi 1$ and $\Phi 2$) are both low (in the neutral position) at time t5 the gate voltage $\Phi 2$ on the transistor (T232) is switched on so that the charge from C232 and C231 can be transferred from one gate to the other. Van Roermund teaches the use of using generated clock signals ($\Phi 1$ and $\Phi 2$) to transfer charge within the CCD. However, Van Roermund is silent on the specific construction of the clock generator and does not teach the use of a first switch on each of the gates ($\Phi 1$ and $\Phi 2$) that connects each gate to any one of the electrical buses.

Wood teaches on Column 8, Lines 32-48 and depicts in Figure 2 and 4a a CCD image sensor that uses clock signals P1V and P2V to drive a vertical CCD. Wood teaches in Figure 4a the specific construction of the timing pulse generator and teaches the use of transistor switches (Q1,Q2) and (Q3,Q4) on each of the signal lines for signals P1V and P2V. Wood teaches that it is advantageous to use MOS-FET for the switches because they provide low input capacitance and are generally fast enough to produce sharp edges for the clock signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the construction of the timing pulse generator of Wood to generate the

timing pulses of Van Roermund in order to provide low input capacitance and to produce sharp edges for the clock signals.

3: In regards to Claim 2, Van Roermund teaches the second switch in a transistor and Wood teaches the first switches are MOS-FETs

4: As for Claim 3, Van Roermund teaches on Column 21, Lines 8-53 and depicts in Figure 46 a charge-coupled device having at least two gates (232 and 234) for receiving an electrical signal; at least first and second electrical buses each having a unique voltage ($\Phi 1$ and $\Phi 2$); Van Roermund teaches a second switch (T232) to connect the two gates (232 and 234) together for reducing power consumption by transferring charge from one gate to the other gate at a time when the first switches are in a neutral position See Figure 47. Van Roermund depicts in Figure 47 that when ($\Phi 1$ and $\Phi 2$) are both low (in the neutral position) at time $t5$ the gate voltage $\Phi 2$ on the transistor (T232) is switched on so that the charge from C232 and C231 can be transferred from one gate to the other. Van Roermund teaches the use of using generated clock signals ($\Phi 1$ and $\Phi 2$) to transfer charge within the CCD. However, Van Roermund is silent on the specific construction of the clock generator and does not teach the use of a first switch on each of the gates ($\Phi 1$ and $\Phi 2$) that connects each gate to any one of the electrical buses.

Wood teaches on Column 8, Lines 32-48 and depicts in Figure 2 and 4a a CCD image sensor that uses clock signals P1V and P2V to drive a vertical CCD. Wood teaches in Figure 4a the specific construction of the timing pulse generator and teaches the use of transistor switches (Q1,Q2) and (Q3,Q4) on each of the signal lines for signals P1V and P2V. Wood teaches that it is advantageous to use MOS-FET for the switches because they provide low input capacitance and are generally fast enough to produce sharp edges for the clock signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the construction of the timing pulse generator of Wood to generate the timing pulses of Van Roermund in order to provide low input capacitance and to produce sharp edges for the clock signals.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 5,483,283 Kannegundla teaches the use of a three level clock output for a CCD; USPN 5,237,422 Kannegundla et al teaches the use of a CCD that has two drive signal inputs; USPN 6,452,152 Yang see Figure 6; USPN 5,734,285 Harvey see Figure 7; USPN 4,554,675 Miwada teaches a charge transfer device for an image sensor that uses a plurality of clock signals to transfer charge.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

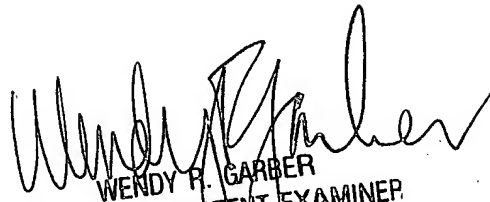
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James M. Hannett
Examiner
Art Unit 2612

JMH
October 26, 2004


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600